

**ABSTRACT**

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<i>Abstract</i>		
<p>Helsinki Freezing – a series of photography and video works together with an immersive interactive video installation – was exhibited for the first time in Gallery Huuto in Helsinki, Finland June–July 2011. The written part of the work concentrates mainly in the documentation of the artistic processes behind the production but reveals some history of breaking and hip-hop culture as well. Furthermore, it discusses theories related to the piece – the concepts of immersion and interaction plus introduces how dance and new media are usually combined in digital (interactive) art.</p> <p>B-boying – a very essential part of hip-hop culture – was born on the streets of New York during the 1970s. Throughout the years the dance form has gained a worldwide popularity. Finnish breakers belong to the world's top ones. With its evolution breaking has moved over from the streets to dance studios and other inside premises – especially in Finland where the climate is rather challenging most of the year. Helsinki Freezing takes breaking back to the streets – b-girls from Helsinki are documented in urban city landscapes during the coldest and snowiest winter period. From the street breaking is taken into a gallery.</p> <p>The photographs and videos for Helsinki Freezing piece were shot in the beginning of the year 2011. Used techniques and angles took use on the possibilities of a GoPro HD Hero headset – a video camera that has been developed especially for filming extreme sports. The interactive part of the installation presents the dance from the breaker's point of view and gives the viewer an opportunity to get “inside of a b-girl's head” observing the world through her eyes. Still photographs and video works that combine i.a. slow and stop motion techniques reveal the series of movements for representatives of the culture as well as for viewers who are not familiar with breaking and help them to understand the foundation and the complexity of the dance.</p> <p>By making art out of breaking one of the aims was also to reach an audience that usually might not visit galleries on a regular basis. The intention was to create a multidisciplinary space where a traditional art gallery transforms into an urban culture scene mixing elements of hip-hop culture with new media.</p>		
<i>Keywords</i>		
<i>b-boying, b-girling, bodily interaction, breaking, exhibition, freeze, hip hop culture, immersive interaction, interactive installation, immersion, interaction, photography, video art</i>		



# HELSINKI **FREEZING**

**Interactive installation –  
B-girl's Point of View**



**Helsinki Freezing. Interactive Installation – B-girl's Point of View**

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# FOREWORD

The original idea for Helsinki Freezing was born already year 2006 or 2007. Back then the project still lacked the common thread as well as a title for that matter. The concept for the work crystallized only a couple of years later, early in 2010 after the GoPro HD Hero camera was released. Everything fell into their places: Helsinki Freezing would feature an immersive interactive breaking installation, video works documenting breaking in the snow and still photos of break freezes. The scenario was quite ambitious with several different media used, so I asked my friend, an Aalto University School of Art and Design alumni, visual artist Essi Ojanperä to join the project and take the still photographs for the piece, so I could concentrate in capturing the video footage. Further in this documentation I have clearly stated which part of the work was carried out by her and which by myself.

..B-GIRL  
CASAGLE



# 1 | INTRODUCTION

The book you are holding in your hand is a documentation of the production of the Helsinki Freezing piece. It dives beyond the surface of the photographs and projection canvases and introduces the reader the whole artistic process behind the work – from the concept to the realization and from the different production phases to the reflections and future of the piece. Furthermore, I have included a section where I discuss the theories related to the subject as well as some cultural background for the work.

Breaking – a very essential part of hip-hop culture – was born on the streets of New York during the 1970's. Throughout the years the dance form has gained a worldwide popularity. Finnish b-girls and b-boys belong to the world's top ones. With its evolution breaking has moved over from the streets to dance studios and other inside premises. Helsinki Freezing takes breaking back to where it all began – the streets. However, from the streets it is then moved back inside – to the gallery where breaking is most likely least expected to be experienced, after all it is a rather uncommon subject in art while, for example, graffiti – another important element of hip-hop culture – has already gained a rather acknowledged and stable position in different gallery curriculums and there are even galleries devoted to street art and graffiti only.

Breakers from Helsinki were recorded in urban city landscapes during the coldest and snowiest winter period. The piece premiered in gallery Huuto in Helsinki June–July 2011. The exhibition consisted of photographs, videos and an interactive installation. All material was captured during winter 2011.

First and foremost the title of the piece, Helsinki Freezing, refers to the fact that all material was recorded during ice-cold winter days. Thus, there is also a semantic connection to the *freezes* – different kind of stop motion poses that are a very important part of the tradition of the b-boying. Furthermore, the media used in the piece is motivated through the title of the work – I see that the photographs i.e. still frames and stop motion techniques, i.e. *freeze* frames, used in the video works serve the purpose well and are more than a logical way of presenting breaking in a work called Helsinki Freezing.

As already stated earlier, all material was captured during the winter 2011. I was more than fortunate to get six different talented Finnish b-girls involved in the project. The dancers documented in the Helsinki Freezing piece are (in alphabetical order): b-girl A-Eagle, b-girl A.T., b-girl L-Monkey, b-girl Ramona, b-girl Taya a.k.a. T-Flow, and b-girl Teja. I am forever indebted for these dancers who agreed to perform in the project without any compensation and consequently, made the production possible. Without them, the whole work would not exist. As the readers may have noticed, all the dancers selected to the project were b-girls. This was not my intention at the planning phase of the work and happened almost by accident – when starting to think about the performers for the piece, I realized that it would be more interesting for me to show the minority of the breakers, i.e. b-girls – to showcase the female talents of a traditionally overly masculine culture – breaking, which is seen to have a 'complicated and contradictory position as a marginal, male-dominated, predominantly non-white spectacular subculture.'



(Fogarty, 2006, p.14) Keeping in mind the above mentioned plus the fact that all the dancers in my work are b-girls and hip-hop culture is a rather popular subject in gender, especially feminist studies (see, for example Charla Ogaz: *Learning from B-Girls* (2006), Rachel Raimist: *Nobody Knows My Name* (1999), publications by Joan Morgan, publications by Gwendolyn D. Pough and more), I would like to underline, that I will not discuss the social – gender- or racial-related – issues of the culture in my work.

Moreover, as the title of the work indicates, all the b-girls, if not originally from Helsinki, were situated in Helsinki at the time of the production. Hence, the piece can also be seen as praise for my hometown, yet again I need to emphasize, I will only briefly discuss the geographical location and its impact on my work.

My work is constructed in following manner: Chapter 1 is the Introduction. Chapter 2 gives a short overview of the history of hip-hop culture and breaking – how it all started on the streets of New York as well as gives a short glimpse on the culture in Finland. In Chapter 3 I concentrate on the concept of creating art by mixing new media and dance and mention some of the previously done works, which I consider the most crucial from the point of view of my piece. Chapter 4 presents a range of methods and theories concerning the creation of an immersive interactive installation. Chapter 5 reveals the artistic processes and different production phases behind Helsinki Freezing. Chapter 6 concludes all of the above mentioned.

## 1.1 | Motivation and intent

Even though we are currently living a boom of popularity of breaking (see more in Chapter 2) – the number of amateur breakers is steadily rising and more and more people are getting aware of this dance form through, for example, videos that emerge in advertising, YouTube and other social media on a daily basis, plus different kind of television talent shows, breaking with its history and tradition still remains rather unknown by a wider audience. Furthermore, it is heavily attached to youth culture and its status as a cultural phenomenon is a “second class citizen” – underground movement that is not recognized as a “real” art form and consequently, gets only little if any grants or financial support from the officials, city, or government. By making visual photographic and video art out of breaking the aim was first of all to expand the awareness about this culture amongst people who are not familiar with breaking and secondly to reach the representatives of this culture – an audience that might usually not visit galleries on a regular basis. My intention was – and will likewise be in the future exhibitions of the piece – to create multidisciplinary spaces, meeting points for different age and social groups where, for example, traditional galleries transform into urban culture scenes or youth centers into art exhibitions.

In addition to the above mentioned there is also a strong personal motivation – being an admirer of breaking since the 1990s and “got-ten totally suck in” to the culture with my first ever personal breaking experience year 2005,



I wanted to make an art piece that would be an ode to the Finnish breaking community and especially the very talented and dedicated Finnish b-girls “rocking it” hard and faithfully and putting this way a good example for existing and future b-girl generations, including myself. I am sincerely hoping, that my work and the example of the b-girls presented in my work will encourage more and more girls and women to become b-girls. As Mary Fogarty (2006) writes what happened some 20 years ago, it was possible that the videos that emerged inside the culture gave women access into a male dominated art form through the visual representations of a few b-girls at first, and an increasing amount of b-girls featured on the videos throughout the 1990s.

## 1.2 | Goals

As already stated earlier one of the main goals of the project was to reach an audience that usually does not visit galleries on a regular basis.

My aim was to create a multidisciplinary space where a traditional art gallery transforms into an urban culture scene mixing elements of hip-hop culture, such as breaking, DJing and knowledge and in the future hopefully also graffiti and MCing (see more in Chapter 2) with new media. I wanted to transform the gallery into a place where all kinds of people can enjoy, have fun, and dance and absorb the elements of a rather unknown culture in a laid-back atmosphere – rather than stay quiet and stare at authoritative pieces of static elitist art. For this purpose I arranged small happenings, for instance dance jams in the gallery, during the first exhibition of the piece. My intention in the future is to carry on spreading the knowledge in a fun, interesting and engaging way – and to support the exhibition with events that draw the representatives of the culture into the gallery and that way also attract more “regular” people to come and see what is going on. Here, I am playing with the thought of making low, or popular, culture high culture by removing it from its original context

**They ask us to react playfully and to wonder whether it is appropriate to play in an art gallery” as we “see ourselves as participants in the dance of our culture.”**

Bolter and Gromala, 2003, pp.137–138

1 | 'Foundation is a term used by b-boys and b-girls to refer to an almost mystical set of notions about b-boying that is passed from teacher to student. In addition to the actual physical movements, it includes the history of the movements and the form in general, strategies for how to improvise, philosophy about dance in general, musical associations, and a variety of other subjects. The idea that a core b-boy philosophy should be so important that it requires a special term says a great deal about the dance and why it is so significant in the lives of its practitioners' (Schloss, 2009, p.12).

2 | Here I would like to reveal the term "Imagined affinity", originally introduced by Mary Fogarty (2006, p.95) in her work *What ever happened to breakdancing? Transnational b-boy/b-girl networks, underground video magazines and imagined affinities*: 'Imagined affinities are moments of identification with another cultural producer who shares an embodied practice (in this case b-boying/b-girling) through either mediated texts or travels through new places. The affinities can be formed through live, embodied communications whether in battles or dance performances or through the circulation of mediated images.'

and bringing it into a new environment – environment that is usually seen to present exclusively brainchildren of high culture.

In addition to the previous paragraph my goal was to present breaking in a way so that viewers who are not familiar with the dance could get a better understanding of the organization and the complexity of the movements of breaking. Moreover, I wanted to clarify the relevance of foundation<sup>1</sup> in breaking – one cannot master breaking without knowing the basic or foundational moves of the dance. Like a b-boy or a b-girl needs to know the codes of the culture regarding battle etiquette and style, they also need to know the history of the culture and the origins of the movements. This element, known as the Knowledge, is discussed in more detail in Chapter 2. At the same time my purpose was to keep the material interesting enough for breakers and other representatives of hip-hop culture – the imagined affinity<sup>2</sup> of the culture that already has gained a deeper knowledge of the topic. This is done *inter alia* by representing in the photographs and video works purely personal and self-invented movements of breaking, as well as many of the foundational ones.

A more declamatory objective was to create an immersive interactive installation that would let the viewer “inside the b-girl’s head”. For this purpose I created the interaction part of the piece – an immersive dancer’s point of view interactive video projection that would reveal the world as it is seen through the eyes of the b-girl while she is dancing.

## 1.3 | Theoretical background, methods, artistic research questions, and material overview

Helsinki Freezing – a breaking installation leans to the tradition of hip-hop culture and history. Even though it is taking new forms in representing the dance I still wanted to honor the origins of the culture. The piece has countless references to the conventions of breaking from the work titles to the small prop details. Some of the connections might not be clear to all viewers but the imagined affinity of the culture can – and will – see the connections.

For readers that are not familiar with breaking and/or hip-hop culture I have included a short chapter (Chapter 2) revealing the birth of the culture in the 1970s New York and the evolution and

state of breaking in Finland today. By enlightening the terminology, history, and tradition I am hoping to spread the knowledge amongst people with no previous contact with the subject – after all, it is all about “the Knowledge” (see later, Chapter 2). To facilitate the understanding I have attached to my work a short breaking dictionary (Appendix 1). The dictionary is a handy tool compiled from bits and pieces of information I have gathered over the years from various sources – written sources as well as personal discussions. Although I have cited several written references there are also many oral resources for my work. A lot of the information is based on word of mouth information, as is the communication flow in hip-hop culture in general. As a matter of fact, the evolution and continuation of the culture leans almost exclusively on the activity and knowledge sharing of the older generation hip-hop culture representatives, or “old school hip-hop heads”.

The other angle of my theoretical background is the concentration in new media and dance practices or non-practices: How is dance used and/or presented with new media? Especially: How is dance usually connected to interactive art? and furthermore: What is the role of breaking in interactive new media pieces? These questions are answered in Chapter 3.

However, most of the artistic research questions concern the immersive interactive installation. I am exploring them through the artistic creation and production of Helsinki Freezing. When creating the installation, some of my main concerns were: How to create an experience as immersive as possible? After all, my goal was to let the viewer have a peek “inside the b-girl’s head”. How would this be possible? Even in these times of virtual realities, is it ever possible to experience the world with the eyes of another person? Beyond that, would an audio-visual experience be immersive enough, especially when the subject in question is something as physical as dance? Should there be a haptic dimension in

the piece as well? These and many other questions I explored during the artistic process I am discussing in the Chapter 4.

Chapter 4 incorporates another set of important questions as well. These apply the framework of the interaction. I wanted to create a bodily interaction that is interesting enough but not too complex for the user(s) to understand. For this purpose I weighed different options and ended up with a solution that might not have been the best one, but was most suitable for the timetable and budget of my work. After constructing the Helsinki Freezing immersive interactive installation I venture to claim that I am aware of most of the possibilities and limitations of an interactive digital dance and video installation.

The methods and material of Helsinki Freezing were as follows: The performers were asked to join the project without compensation. They were given loose instructions about what I wanted to capture on video and still photographs: a couple of different freezes and one run (a complete set of movements) per dancer. In the end it was the dancers decision what she would perform – also it was to them to decide whether they would freestyle or have some pre-planned moves in their sets. I did neither costume nor make-up the b-girls to keep the set-up as authentic as possible.

The locations were chosen quite randomly, but still keeping in mind that there would be something typical exclusively for Helsinki in every frame. Some of the locations, for instance The Opera House and The Sibelius Monument are famous landmarks and tourist attractions in Helsinki, while some, for instance Suvilahti Cultural Center was chosen because its importance for hip-hop culture in Helsinki – the location features one of the few legal graffiti walls in Helsinki.

The still photographs for the exhibition were shot by visual artist Essi Ojanperä.



The video material was shot by me with a GoPro HD Hero camera that is a small lightweight camera developed especially for extreme sports and adventure photography. For Helsinki Freezing interactive installation I used the headset mount for the camera in order to capture the dance from the dancers point of view. I also captured still images with the GoPro camera. These images were later used for the stop motion sections of the third person view video work series.

After I had captured all the material began the editing phase. I compiled the third person view videos into a showcase-like footage where each of the breakers had her own run. The most suitable photographs – series of movements and different freezes – were selected for the exhibition and post-produced for large-scale digital image printing.

The interactive installation video material, HD video with a 1280 x 960 resolution using fish eye lens, shot with the b-girl wearing a GoPro headset camera (i.e. dancer's point of view footage) was edited to suit the projection canvas, a curved 10 x 3,5 meters see-through canvas that enabled background projection. As already mentioned, the interactive installation was created from the GoPro video material, with an Xbox Kinect sensor hidden inside a boombox, Processing, Quartz Composer composition, a huge projection canvas, a 2,5 x 1,5 m mirror, a projector and two loudspeakers.

The interactive installation is a multi-user interface based on the Xbox Kinect motion tracking abilities. Up to six people can interact

with the piece simultaneously. The interaction is based on the movement and location of the people in the three-dimensional space where the installation is mounted. The Kinect sensor, which is placed on the floor in front of a huge projection canvas hidden inside a boombox measures the distance of the users from the projection canvas on a previously defined area (indicated with the checkered dance mat). The Kinect data is sent through Processing to Quartz Composer, which in turns displays the video and plays the sounds according to the information it receives. The video features a set from each of the b-girls involved in the project. The sounds are authentic including crunching of the snow and whistling of wind. The closer the user is to the canvas the more close-up picture she sees and louder noises she hears and vice versa. If no one is in the active area of the installation, simply nothing happens and the system displays a freeze frame from the video. The Helsinki Freezing interactive installation can be experienced live in Aalto University Masters of Aalto exhibition in Helsinki May–June 2012.

Chapter 5 goes through the whole artistic process and the different production phases behind Helsinki Freezing in a more detailed variety. I am enlightening the different work phases in the light of the different roles I had as a design director executing this work: artist, concept designer, producer, director of photography, photographer, editor, interaction designer, programmer, art director, graphic designer and more.

The Helsinki Freezing interactive installation. the Kinect sensor is hidden inside the boombox. The active area for the interaction is marked with the checkered dance mat. The user can interact with the piece by moving in the space. The video output as well as the sound changes according to the user's input. The image displayed is the b-girl's point of view footage that is projected onto the canvas from behind.

# 2 | SHORT HIP- HOP CUL- TURE OVER- VIEW

1 | DJ Kool Herc (Clive Campbell), the man credited being the father of hip-hop, was originally Jamaican and moved to New York in 1967. He got to know the sound system parties – outdoor discos touring across the country with powerful loud speakers – back in Kingston as a young boy. The DJ's of the sound systems were the first inventors of remixing songs – something that DJ Kool Herc would also use later to create whole new songs from the “breaks” – instrumental percussion sections – in order to please the crowd, especially the dancers (Hilamaa and Varjus, 2000).

This chapter is a short hip-hop culture overview to expose the context of my work. In my opinion the reader has to have some kind of basic knowledge of the history and tradition of the culture where it strives from in order to understand my project.

## 2.1 | Terminology

As the most attentive readers might already have noticed, I refer to the hip-hop dance as *breaking*, *b-boying* or *b-girling*, not as “breakdance” or “breakdancing” as it is often incorrectly called in the mainstream. As Joseph G. Schloss (2009, p.58) discusses in his book *Foundation. B-boys, b-girls, and hip-hop culture in New York*, most b-boys and b-girls feel that the term “break-dance” ‘was part of a larger attempt by the mass media to recast their raw street dance as a nonthreatening form of musical acrobatics’. Further, the work of Schloss (2009) reveals that when the breaking became popular in the 1980s, it was assigned the term “breakdancing” by cultural outsiders who wanted to give it a broader and more accessible appeal. As follows, the correct terms used, defined and approved by the breaking community, are *breaking*, *b-boying*, *b-girling* and *breaker*, *b-boy*, *b-girl*. The origins of these terms might require a little explaining; according to Jorge “Popmaster Fabel” Pabon (2006, pp.19–20) the invention of terms b-boy and b-girl must be credited for DJ Kool Herc<sup>1</sup> who would at the first hip-hop parties in the 1970s call out the dancers by saying: “B-boys, are you ready? B-girls, are you ready?” just before starting to play the break beats – the musical sections of songs that breakers dance to. Ergo, terms *b-boy* and *b-girl* presumably come from the words *beat boy* or *break boy* and *beat girl* or *break girl*, although several sources also state that the origins of the terms would be *Bronx boy* and *Bronx girl*, since the dance was originally born in the ghettos of Bronx amongst the local teenagers.

The correct terms are a bit problematic what comes to referencing to b-girls, who are the protagonists of Helsinki Freezing. What is the dance they are performing? Is it b-boying or b-girling? What kind of connotations do these terms have in relation to gender? As Schloss (2009) points out, it is important to note that the term b-boying is gender-specific in a way that “breakdancing” in turn is not. He then adds that many b-girls might refer to what they do as b-girling, however, implying with this that the activity is different from b-boying simply by virtue of the gender of the person doing it. What is more, as b-girl Seoul-





..B-GIRL  
LEMONKEY..

sonyk states in an interview made by Schloss (2009, p.65): ‘B-girls often refer to what they do as “b-boying”, but b-boys *never* call their dance “b-girling”.’ Hence, Schloss rightly points out that based on how the representatives of the culture use the term suggests that the term b-boying is normative as is the projection of masculinity in the dance.

In my work I have made the decision to mostly use the terms *breaking*, *breaker*, *dancer* and *b-girl* – after all the stars of my work are b-girls. However, occasionally I might be as well using the terms *b-boy* and *b-boying* referring to the dance style and all its practitioners – male and female.

More breaking terminology can be found in the Appendix 1.

## 2.2 | Hip-hop culture

Hip-hop culture as most of the people experience it nowadays has come quite far from the original form in what it was born on the streets of New York late 1960s and early 1970s amongst African-American and Latino teenagers. Price (2006, p.1) defines the first steps of the culture in his book *Hip Hop Culture* as follows:

Hip Hop evolved during the 1970s as a liberation movement in the form of a diverse culture; it was a next-generation civil (human) rights movement sparked by ostracized, marginalized, and oppressed inner-city youth. Grounded in the traditions of U.S.-born Blacks and first- and second-generation Latinos and Latinas as well as people of Caribbean

origin (...), Hip Hop is a product of the African diaspora and combines music, dance, graphic art, oration, and fashion with a growing aesthetic leaning heavily on material objects and media. It is a meaning and method of expression thriving on social commentary, political critique, economic analysis, religious exegesis, and street awareness while combating long-standing issues of racial prejudice, cultural persecution, and social, economic, and political disparities.

Given this evidence it can be seen that hip-hop culture is interracial and very tolerant. During the years the culture has developed rather strict internal rules and traditions, which the members of the culture are supposed to follow. However, it is striving for equality and equal opportunities for all. The community does not give out false credit, instead one needs to earn her kudos. Because of this eternal aspiration of the individuals for recognition and acknowledgement the hip-hop is constantly evolving and creating new modes of expression. During the last three decades hip-hop has become a global phenomenon. There are hip-hop heads everywhere from Japan to Europe and Africa, Australia to North America.

Hip-hop culture consists of five main elements: B-boying, DJing, graffiti, MCing and the Knowledge. As Price (2006) perceptively states, each of the elements of hip-hop culture is used to serve as a method of self-expression relying on the individual creativity of the person and highly personalized modes of performance. Each element has its roots in urban metropolises and was born in the socially dim, economically dire,



and politically hopeless inner cities of the late twentieth century America.

Because of the scope of my work I will mainly concentrate explaining the concept of breaking and only quickly browse through the other elements of hip-hop culture.

## 2.3 | The elements of hip-hop

### 2.3.1 | DJING

DJing, or disc jockeying is an art form mixing together; cueing and scratching (usually) prerecorded music – songs and sounds – for (usually) a live audience. DJs may, of course, perform their sets in the radio as well, which was actually the case with the first DJs. It is worth noting though, that only with the live performances DJs started to mix the songs together in a more creative way – before this invention a DJ performance was mostly about play lists and just playing songs one after another in the radio. DJing originates from the Jamaican sound system parties, but first DJ Kool Herc (see page 18) and the hip-hop culture made it what it is today (Price, 2006).

### 2.3.2 | GRAFFITI

Graffiti is the visual art of hip-hop culture. According to Price (2006, p.28) ‘archeologists first used the term “graffiti” to describe the system of communication and expression depicted by writings, drawings, and scribbling on surfaces.’ The art of graffiti started spreading when street kids from different areas of New York during the late 1960s and throughout the 1970s follow-

ing the example of a couple of Philadelphian pioneers, started tagging their names around the city to make a name for themselves. By the end of the twentieth century graffiti had become the product of urban rebellions who were fighting the power of parents, police and other social authorities. The activity was performed mainly for personal satisfaction and the quest for a “ghetto celebrity” status. Graffiti artists – the self-acclaimed outlaws – were ready to do almost anything – throw themselves at risk, face immense danger and break the law – in order to get their art under the public eye on walls, freeway overpasses, buildings, trains, public mailboxes, telephone poles, underground passages and other visible areas (Price, 2006).

Graffiti culture exploded in 1971 after *New York Times* wrote an article on one of the early New York graffiti writers TAKI 183. Around the same time the writers had also found more powerful tools for their art: Permanent markers and spray cans to cover an even larger area of the wall or, preferably a subway train surface to expose their name for as many people as possible. When the 1980s arrived the New York City officials as well as the citizens of New York were sick and tired of the overall spread graffiti that was also connected to criminality and the city’s growing drug problem. In 1984 the New York City Transit Authority (NYCTA) began a five-year program to abolish graffiti. This period between 1985 and 1989 is now known as the “die hard” era. After a couple of years of graffiti writer persecutions NYCTA and the New York Metropolitan Transportation Authority (MTA) succeeded in their task and the city was almost clean (at149st, 2012). The war on graffiti in New York still continues today.

### 2.3.3 | MCING

The MC, also known as the master of ceremony, is the early rapper. It is the view of Price (2006, pp. 34–35) that like DJs and graffiti artists, the MCs played a very practical role in the urban communities. The MCs acted within the urban context of the West African poet/musician tradition that was intended to carry and reveal the local history of a community through oral tradition. The MCs used the microphone to taunt, tease, testify, and please. Price lists some of the most influential oral tradition practitioners who set the stage for the rise of the MC: Gil Scott Heron, Pigmeat Markham, Rev. Jesse Jackson, Muhammad Ali, and countless others. Consequently, I would like to add to the countless others the two politically and socially very important oral leaders, Martin Luther King and Malcolm X. These two characters had an enormous impact on the birth of the politically critical MC and rap music.

### 2.3.4 | KNOWLEDGE

The last and the latest element of hip-hop culture, referred ordinarily as the “fifth element” is the Knowledge. This element is the hip-hop philosophy – the awareness and substance of the culture. The Knowledge was added to the hip-hop canon by Afrika Bambaataa<sup>2</sup>. Price (2006, p.37) makes a note on the appearance of the fifth element:

During the 1980s, as Hip Hop [sic] expanded in territory and in prominence, it also expanded in content. Additional elements were added not as replacements, but as complementary expansions of the growing Hip Hop cultural movement. Afrika Bambaataa and his Universal Zulu Nation advocated for the fifth element: “Knowledge, Culture and Overstanding”. Basing his ideas in the principle of understanding the groundwork laid by the pioneers and the conceptual history of the previous elements, especially the social, political, and economic aspirations at their core, Bambaataa attempted to revitalize the collective consciousness that had created the culture to begin with. The numerous individual compromises that had taken place, in his opinion, subverted the initial intent of the culture, creating a breeding ground for artist in pursuit of financial opportunity instead of activism.

2 | Afrika Bambaataa was a warlord in the feared Black Spade gang who later became the “Master of Records”. He was the shaman of DJing who did a number of famous hip-hop mash-ups including for instance Kraftwerk, Fela Anikulapo-Kuti, the “Pink Panther” theme, the Rolling Stones and the Magic Disco Machine. Afrika Bambaataa founded the first hip-hop institution, the Universal Zulu Nation. The organization, still active today, strives to raise consciousness inside the hip-hop culture and spread the Knowledge. Afrika Bambaataa is ‘The missionary who took the hip-hop message to the four corners of the globe, and then beyond Planet Rock.’ (Chang, 2005, p.90)

The most crucial element of hip-hop culture from the point of

view of my work, the b-boying/b-girling is examined in more detail in the following subchapter.

## 2.2 | B-boying

As Lola Ogunnaike (1998) states in her article “Breakdancing Regains Its Footing” for *New York Times* breaking was once ‘at the forefront of the cultural flowering called hip-hop’ but soon ‘was left in the dust’ as rap music took over representing hip-hop in the popular culture. Breaking is still alive and kicking but for example the main media attention in hip-hop culture is unarguably fixated to the other elements of the culture, mainly to the huge music industry and big American rap artists.

The new dance broke into the awareness of the mainstream in the beginning of 1980s. That is when the first written references about breaking appeared in the local newspapers. Photographer Martha Cooper was assigned to do a story about a riot, which actually was not a riot but a dance competition. Later Cooper asked Sally Banes to write an article about the new dance to the *Village Voice* (Cooper, 2004). Martha Cooper has, in fact, done pioneering job in documenting the birth of hip-hop culture, especially graffiti and b-boying with her photographs.

Breaking is usually classified as the physical art of hip-hop culture – as graffiti is seen as the visual, and DJing and MCing as the musical or rhythmical parts of the culture. According to Holman (1984) breaking is a mixture of black dance styles that takes its inspiration from international films and hybrid identities. In its early years breaking was more about the style and finesse – the dancing – not as much about the premeditated acrobatic movements as nowadays. With the evolution of DJing, and especially DJ Kool Herc’s invention of prolonging the break sections of the songs by using two of the same record on two turntables and a mixer, mix-

ing back and forth from one record to another never leaving the break, the dancers could start develop more complicated moves and styles as the break sections of the songs were longer. The work of Holman (1984 p.36) indicates that:

As steps by freestyle dancers became more spectacular and unique, competition to see who was best became more intense. In order to outdo each other, freestyle dancers began dropping to the ground using Russian-style footwork and gymnastics moves like sweeps and splits. Comedy and pantomime in moves or routines helped to zap a judging crowd in freestyle dance battles which usually took place at the first hip-hop jams where break mixing DJs supplied the sounds.

Like in the other elements of hip-hop culture, the battling and the competitive aspect is a very important part of breaking as well. It is about proving yourself, making a name and having the craziest and most impressive moves to defeat your opponent. The battling aspect of hip-hop culture has its origins in the gang culture of New York of the first half and plus of the twentieth century. Jorge “Popmaster Fabel” Pabon, a Zulu King and a hip-hop historian, describes in the book of Jeff Chang (2005, p.115) *Can’t Stop Won’t Stop* how he first encountered breaking in the mid1970s and how it appeared to him: ‘The style of a b-boy, I never saw nothing like it. I’d never seen a dance approached like that original b-boy flavor, that straightforward, aggressive sort of I’m-a-tear-up-this-floor feeling. A lot of times in my neighborhood I didn’t see smiles on their faces. They were on a mission to terrorize the dance floor and to make a reputation.’ This, of course, is very beneficial for the evolution of the dance: in order to stay on top, b-boys and b-girls constantly need to come up with new moves which then breeds the art of breaking to a whole new level.

Breaking has, depending on the method of calculating, from four to six main elements that the dancer should be able to perform. According to the tradition each run (set) of the dancer should start with *top rock* – dancing in an upright position using some of the basic steps and their variations. Top rock is followed by a *go down*, a move that is used for getting smoothly to the floor level to do the *footwork*. Footwork includes fairly complex step patterns, which are based on the fact that the legs “do the work” while the hands are used mainly to support the upper body. Footwork can be mixed with *power moves*, which are the air moves adopted to breaking mainly from gymnastics, acrobatics and martial arts. Each set should end with a *freeze*, the personalized stop motion posture revealing the character of the dancer. – The Helsinki Freezing still photographs concentrate exactly in these stop motion poses. Others than the above mentioned, the dancer can as well use *gestures* (for instance, mimics) and *burners* (“burns”, insults with gestures or tricks that are very difficult or challenging to carry out). Additionally, it is arguable whether the finishing part of the run, the moment just before the dancer exits the dance floor should be added to this list. These moves, used to emphasize the definite ending of the run, do not have a mutually agreed appellation so it can be discussed if they can be seen as an individual part of the dynamics of breaking. Some consider them as an elemental part of b-boying that would deserve a name how to refer to them as some claim that these moves do not relate to the dance itself but are rather a self-evident closure for one’s set.

## 2.3 | Breaking in Finland

The history of Finnish breaking is compiled mainly on the basis of a Finnish book published year 2005, considered as the “Finnish breaking bible”, *Breikkaus on mun elämäntapa (Breaking is my lifestyle)* by Anne Isomursu and Nina Tuittu. (By the way, I feel obliged to mention here, that two of the b-girls, b-girl A.T. and b-girl Taya, featured in Helsinki Freezing, are also interviewed in the book by Isomursu and Tuittu.)

Considering the geographical and mental distance breaking found its way to Finland rather quickly after its birth in the ghettos of New York. There are several Finnish newspaper articles from the mid-1980s that write about this new dance form in a rather admiring tone. The first Finnish breakers ever entered the public consciousness around year 1983 (Tuittu and Isomursu, 2005). Question remains, how did the dance arrive to Finland from New York? Best guess would be that it found its way to the Finnish living rooms through sky channels, music videos and the first classic breaking movies as *Wild Style* (1983), *Flashdance* (1983), *Breakin’* (1984), *Beat Street* (1984) and *Delivery Boys* (1985) spreading on VHS-cassettes that were copies of copies of copies. One could also assume that the Finnish exchange students have served as hip-hop culture messengers. After all at least to my understanding it was rather popular and fashionable to spend an exchange year in the U.S.A. in the 1980s Finland.

Notwithstanding, the first authentic b-boy peer arrived to Finland in the form of Charles Salter, a professional b-boy originally from Louisville, Kentucky, who is entitled as “the

ambassador of breaking” in Finland (Tuittu and Isomursu, 2005). Other Finnish pioneers in breaking who started b-boying around that time are b-boy Hypnotic and b-boy Jesse13, to mention a few. These b-boys are still rather actively involved in the scene today.

Towards the end of the eighties the novelty was lost and people seemed to lose their interest in breaking. The second coming of b-boying in Finland is dated somewhere in the mid-1990s. According to some underground b-boy/b-girl videos (Seven Gems videos and Mr. Wiggles Travel Logs, cited in Fogarty 2006, p.61) of this time period, breaking had become a dynamic part of popular culture in countries like Japan, Canada, France and Germany. The popularity of breaking in other European countries would explain the popularity of b-boying that started to raise its head in again those days in Finland as well. In her article in *Helsingin Sanomat Kuukausiliite* “Vastaus on hip hop” (“The Answer is Hip-Hop”) from 1996 Laura Pekonen (1996) interviews youth from the capital area of Finland and states that hip-hop has become a fashion phenomenon. The article also contains a visualization about the history and state of hip-hop in Finland:

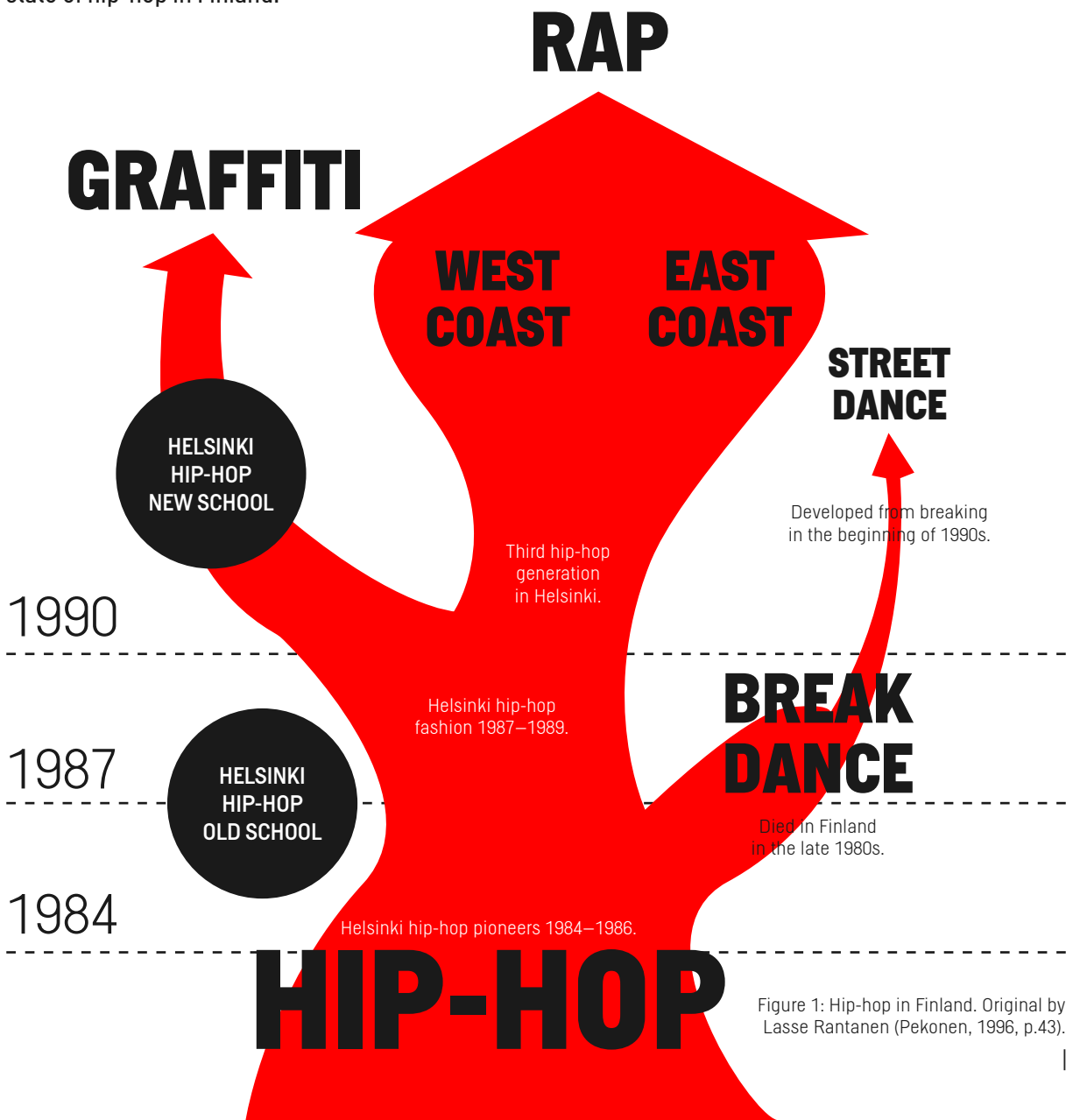


Figure 1: Hip-hop in Finland. Original by Lasse Rantanen (Pekonen, 1996, p.43).

Although hip-hop culture was gaining popularity, the evidence seems to indicate that by 1996 breaking had almost disappeared from Finland. However, the visualization is somewhat contradictory to the text that includes a scene in a club in Helsinki with breakers and interviews of some Finnish b-boys as well. As follows, maybe the conclusion should be that the other elements of hip-hop were at the first frontier of the second coming of the culture in Finland while the raise of the popularity of breaking followed only a little bit later.

Currently we seem to be living the third b-boying boom in Finland. I would like to give a big slice of the credit for this for the internationally most successful Finnish breaking crew, Flow Mo. The b-boys and b-girls of Flow Mo have been very active in promoting breaking into the awareness of the big masses in Finland. In 2010 they also founded in Helsinki their own dance school Saiffa devoted to hip-hop dances but mostly breaking. On top of that nowadays also many other dance schools have breaking lessons in their curriculum – a fact that naturally makes breaking more accessible to a wider audience and lowers the barrier to start practicing breaking in Finland. In addition to Flow Mo there are other b-boys as well who have toiled for years in order to take Finland to the world map of breaking, and thus increase the visibility of breaking in Finland, for instance b-boy Ätä from the Scandinavian Ghost Crew and the Finnish b-boy crews Moonfreeze, Sticky Ruckus, Floorphilia and Rancid Rockers.

## 2.4 | What is a freeze?

B-boy freezes are stop motion poses during the opponent and revealing the character of the dancer. Freeze is any kind of stylized halted motion – “freezing” or “turning into ice” – that is

used in breaking to emphasize for example the end of a run. Freezes can also be performed in the middle of a series of movements or between them to emphasize some part or a pattern in a song. In this case the effect that the freeze move creates is based on the variation of the pace of the dance: it flows from swift to total momentary halt and back to swift again. In her article “Breaking” Sally Banes (2004, p.16) separates characteristics of freezes as ‘the exit framed the freeze, a flash of pure personal style, which was the most important part of the dance. The main thing about the freeze was that it should be as intricate, witty, insulting, or obscene as possible.’

As every b-boy and every b-girl is constantly coming up with new freezes there is a huge amount of them in breaking. Most common ones are Baby freeze, Chair freeze and different headstand and elbow freezes. Likewise, each freeze has several variations – freezes can be carried out in an invert, partly flipped or totally personalized manner. Inventing a totally new freeze is one of the ways of proving your originality in breaking. Coming up with a totally new move is highly appreciated by the peers and a b-boy or a b-girl could end up in the canons of breaking with the new move – after all, the inventor of the move gets to name it.

More info about freezes can be found in the Appendix 1.



..B-GIRL  
S.A.T.



# 3 | DANCE X NEW MEDIA

In this chapter I am enlightening the history, practices and non-practices of art pieces combining dance and new media. I am not as much interested in modern dance, ballet, etc. where there are undoubtedly hundreds of examples of the use of dance in the context of new media. Rather, I am concentrating and trying to reveal examples from the marginal, from the underground culture and street dance, mainly breaking, a dance forms that is positioned outside the establishment.

## 3.1 | General

Rubidge (2011) has introduced a theory that the principle of understanding a dance performance emerges from something deeper than a person's cognitive understanding. Her discovery is based on a neuroscientific study by Gallese et al., where the scholars found out that the same paternal neuronal activity is activated in the neurons whether the action – the dance – is being viewed or enacted by the subject. The evidence seems to be strong that when viewing a dance performance, or as in my case, an interactive installation, the experience is fully reminiscent of actually enacting the piece. Consequently, it must therefore be recognized that the combination of new media and dance should be a rather strong experience for the viewer. Turning to Steve Dixon (2007), one finds that by the end of the last decade of the twentieth century, computer technologies have started to play an increasingly important role in live theater, dance, and performance developing the dynamics of these art forms. The new dynamics have created new dramatic forms and performance genres

emerging in interactive installations.

When benchmarking the new media scene regarding pieces combining dance and new media, I noticed that there were several different kinds of live dance performances using new media as a prop for the real-time performance. There also seemed to be multiple different installations with, for instance, video projections of dancers but only few of them were interactive. Moreover, in all the works I ran into, the dance was depicted from a third person point of view, not from the dancer's first person point of view as in my installation. Besides that Helsinki Freezing happens in a gallery environment, not on a theatre stage what is usually the case what comes to interactive dance pieces. The second difference is that interactive performance dance pieces most commonly react with the performer herself – the dancer – not the audience as my piece does. As my benchmark implies, new media is widely used in theater environment and live performances. By contrast the concept of taking dance into a museum or gallery still seems still rather uncommon.

According to Broadhurst (2007) performances with digital media prioritize the delimited body and intelligent interactive technologies. She adds that the practices in live performance blur the boundaries between the physical and virtual as well as the boundaries between conventional art practices and innovative technical experimentation. Although my piece is not a live performance, in my opinion the same principles can be applied to my work, as the Helsinki Freezing interactive installation is designed to make the viewer occupy the “virtual body” of the dancer by offering her an opportunity to look at



the world with the eyes of a b-girl. Moreover, the Helsinki Freezing interactive installation introduces a kind of innovative technical experimentation by trying to create a virtual representation of a physical action.

However, there seems to be a small conflict between the new technologies and the dance community: as dancers, choreographers and performance artists seldom are programmers, the outcome of the piece is restricted by their ability to code in contrast what would be the end result if one would incorporate programmers into the projects. On the other hand, when people who do not know much about programming start designing art pieces that require use of new technologies, they might come up with totally new solutions, as they are more able to “think outside the box”. Then again, some enthusiasts might as well see the technology as a threat to the main element of the performance, the dance. Povall (2001, p.455) found that artists have in fact, often been creators of new technologies, by refusing to be satisfied with the currently available tools. ‘There is a received wisdom amongst the dance community, however, that technology is a dangerous thing – that to use technology as an integral element in a work is to detract from the body, from the choreography and design, from the core of what is dance. It is a thing to be feared’. This fear of progress, of new technologies, might exactly be the reason, why most of the art pieces combining dance and new media done so far follow a rather similar pattern. There seems to be only little if any variation in the core concepts of dance x new media pieces. As follows, one would hope that the dance community would take a lesson from Bolter and Grusin (2000, p.19) who already

in the turn of the millennium noted that digital or new media are not ‘external agents that come to disrupt an unsuspecting culture.’ In turn, as they continue, digital media ‘emerge from within cultural contexts, and they refashion other media, which are embedded in the same or similar contexts.’

There are, however, a couple of networks, that concentrate on the liaison of dance and new media. One is the 100dancers event, arranged for the first time in Copenhagen year 2011. ‘100 DANCERS invites CI-dancers, dancers and choreographers along with collaborating musicians and new media artists to join a new international forum and aims to facilitate artistic exchange and research within the field of dance, as well as creating large scale public performances’ (100dancers, 2012). The second is the Dama, Dance and Media Art network that is ‘a Nordic/Baltic network of higher-level Dance education institutions and New Media education institutions. It organizes annual courses, exchanges and workshops’ (Dama, 2012). Being a student in Media Lab Helsinki I was fortunate to take part in the Dama/Raflost dance and electronic art festival arranged in Reykjavik, Iceland year 2009. The two events I mentioned here also concentrate mainly on the creation of live performances combining dance and new media.

So, what seem to be the most commonly used technologies in interactive dance pieces? There are several artistic productions – mostly live performances – that take use of motion capture technologies and software. The projection of the performance usually happens real-time and the output is in many cases a 2D or 3D render

image of the dancer performing. Hence, the rendered image is a kind of avatar or digital double of the dancer. In these cases the interaction happens typically between the dancer(s) and the software, more sparsely between the audience or the viewer and the technology.

In Helsinki Freezing I took a new view of looking the concept of combining dance and new media. As I see it, the dancer already knows and feels the dance in contrast what the viewer potentially does not. Consequently, I felt that it was more important to open new perspectives for the viewer than to create another digital double of the dancer. I removed the dance from its physical context and made it ones and zeros for the viewer to explore. The idea of exploring the piece also contains my other goal: not presenting the piece on a stage where the audience is usually only the receiving party, but in an open environment, in this case the gallery where anyone could enter and interact with the piece.

## 3.2 | Breaking x New Media

One of the main reasons why I decided to make an interactive installation combining breaking and new media was the fact, that there are very few examples of pieces of this kind made before. I did some background studies on what had been done before and noticed, that there were no previous cases that I could use as my references as such. My main findings were that all the pieces done previously that were combining breaking and new media were live performances. I was unable to find interactive installations related to breaking designed for gallery or museum environments. The example cases of b-boying x new media are listed in the following subchapter.

Other background work I did was related to the concept of the work – the semantics of b-boy vocabulary; *freeze*, *freezing*, *ice*, *breaking the ice*... A couple of examples I found were clever wordplays, such as “Ice breaker” and “Icebreakers”. However these works were just regular YouTube videos, no interaction involved.

The examples I found were a “Breakdance on ice”<sup>1</sup> video shot with a handheld, most likely mobile phone camera there a supposedly Brazilian b-boy was doing air flares on ice while visiting Finland. I also found another video of a Danish b-boy breaking on ice, called “Ice Breaker – Insane Skills”<sup>2</sup>. (Worth to mention

1 | The “Breakdance on Ice” video can be watched on YouTube, at: <http://youtu.be/59KqpTazrxE> [Accessed 10 January 2011].

2 | The “Ice Breaker – Insane Skills” video can be watched on YouTube, at: <http://youtu.be/eW7uvlKJYjE> [Accessed 10 January 2011].

the song in the background is “The Freestyler” by a Finnish band called Bomfunk MCs.) This video appeared to be more of an inside joke of some kind. After Helsinki Freezing was already done I ran in the end of year 2011 into another “icebreaking” video, made by Finns, the “ICEBREAKERS in Jukkasjärvi 2011”<sup>3</sup>. All of these videos have in common the fact that they present breaking in the winter conditions as well as combine b-boy vocabulary and the semantics associated with *ice* in the titles of the videos.

### 3.3 | Example Cases

How has new media then been utilized in showcasing breaking? The more serious pieces combining breaking and new media are, as mentioned earlier, live performances. The first example was made in Finland and the dancers represent the Finnish breaking crew Flow Mo mentioned already earlier. The piece was called “Ovet” (“Behind Doors”). It premiered in Kiasma museum of contemporary art in August 2008 during the URB festival in Helsinki. URB is a festival devoted to urban arts arranged since year 2000. ‘Ovet – Behind Doors presents six brief moments within six unique realities. The process that lead to the work was initiated by the observation and interpretation of the individual and the multi-faceted reality. The goal that was set was to explore the motion of b-boying and find new interpretations and ways of expression within that motion and to break clichés often related to the style of the dance. In this work b-boying is presented in the form it originated in before the commercial exposure and exploitation in the 1980s – as a solo dance’ (Flow Mo: Ovet, 2008). The piece was mostly about the dance and less about the technology, although it used some rather innovative projection solutions. The documentation of the work does not reveal if the projections were interactive or not.

In 2009 Flow Mo did also another live performance called “Response”. “Response” looked ‘at the possibilities of combining the movement of dance with moving image.’ (jamppamasterjay, 2010) The artists behind the piece are video designer Petri Ruikka (Media Lab Helsinki), light designer Jani-Matti Salo (Theatre Academy Helsinki) and sound designer Taneli Bruun (Media Lab Helsinki).

My third example is a video art piece made also by a Finn although filmed in New York. Director Jani Ruscica’s *Beatbox, alternate take* is another of his short films (another is the *Bat-box, take one*) focusing on two different ways of using sound

3 | The “ICEBREAKERS in Jukkasjärvi 2011” can be watched in YouTube, at: <http://youtu.be/dxbJJwdnxwU> [Accessed 14 December 2011].

and movement as tools to navigate and identify one's environment in the urban metropolis.

*Beatbox, alternate take* does this through the experiences of hip-hop artists – sound and movement are portrayed as a cultural phenomenon. Ruscica's piece, however, concentrates mainly on beatboxing although it features a couple of b-boys as well (AV-arkki, 2012).

One example from the big world undoubtedly well-known to a wider audience is based on iLuminate™ technology, made famous by the team iLuminate™ performances in the Americas Got Talent television show. The iLuminate™ takes use of wearable technologies – Electroluminescent Wire and LED's. The dancers wear black overalls covered with the different light technologies. The flashing of the lights on all the dancers is synchronized to give various effects according to a beforehand-composed choreography (Wikipedia, 2012).

The patent pending iLuminate™ system is the first and only wearable, wireless lighting system that offers customizable, intelligent lighting that you can control via different mediums across many performers. Real-time control mediums include DMX consoles, ProTools, MIDI devices, pre-programmed sequences that you can trigger, or our very own custom iPod/iPad application for a truly interactive experience. The small and lightweight iLuminate™ devices can wirelessly control strings of EL (Electroluminescent) wire or LEDs (Light Emitting Diodes) on costumes or props for a fully customized multicolor light display; perfect for dancers, aerialists, choreographers, stylists, musicians, DJs and set designers' (iLuminate, 2012).





..B-GIRL  
-PAMONA-

# 4 | CREATING AN IMMERSIVE INTER-ACTIVE INSTALLATION

Here I am determining what is an immersive interactive installation reflecting the theories behind the subject. I also divide the term into smaller fractions to understand the real essence behind the words and the reality they represent. I discuss my work in the context of the presented theories and define some of the challenges and obstacles that may rise when designing interactive immersive installations.

Dixon (2007, p.559) has drawn attention to the fact that actually all art is interactive. This happens because ‘all art is an interaction between the viewer and the artwork and thus all artworks are interactive in the sense that a negotiation or a confrontation takes place between the beholder and the beheld.’ He then continues that ‘where digital interactive artworks (...) differ is in the ability of the user or audience to activate, affect, play with, input into, build, or entirely change it.’ On this basis it may be inferred that the difference between all art and interactive art is the fact that even though all art contains an interaction, it always remains the same, a static piece of art, whereas the interactive art is never the same – the “final” outcome of the piece can and will never be repeated.

The terminology then: *immersive* is something that thrusts into or engrosses one fully – an experience so powerful, that one might forget

the actual surroundings and totally engage with, in this case, an art piece without knowing what is happening around her. *Interactive* is something that a person can react to or enact with. The simplest interactions include for instance pushing a button, turning a switch or working a mouse or a touch screen. Installation is a usually site-specific three-dimensional artistic work designed to transform or alter the perception of a space.

## 4.1 | The interaction

Interactivity in interactive art has different categories and levels depending of the openness of the system, consequent level and the depth of the user interaction, the user’s creative input. Here I present the four categories according to Steve Dixon’s (2007, p.563–595) Categories of interaction model.

Levels of interaction in interactive art (ranked in ascending order from the simplest one to the most complex one):

### 1 | NAVIGATION

The simplest form of interaction is the Navigation. It refers to a simple function that can be just a single click of the mouse or an indication



of “right”, “left”, “up”, or “down”. It could also feature other interfaces, such as a button, a switch, a remote control, a steering wheel, or, as in the case of Helsinki Freezing, the human body.

## **2 | PARTICIPATION**

As the name already indicates the second level of interactivity, the Participation requires audience participation and preferences. This means that in order to the piece to be complete the audience needs to interact with it, and what is more, also show some preferences how they want the piece to react in order for them to get the desired output.

## **3 | CONVERSATION**

The third level of interactivity is the Conversation. This indicates that a meaningful “conversation” takes place between the art piece and the audience – there is interchange and exchange between the operators.

## **4 | COLLABORATION**

Fourth level of interactivity in interactive art is the Collaboration. Dixon defines this category as follows: ‘Interactive collaboration comes about when the interactor becomes a major author or coauthor of the artwork, experience, performance or narrative.’ He then adds that the collaboration may happen between a single user and the system or the computer or the virtual

environment, but for the most part occurs when the users work together in order to recreate the work by the means of the available computer technologies or within the constructed virtual environment.

I would venture to claim that the interaction in Helsinki Freezing is a mixture of all of the Dixon’s paradigms. First of all the user needs to interact with the system by navigating it with positioning her body in different points in the space on the x- and z-axis. Secondly, participation is needed. If no one participates i.e. interacts with the piece, simply nothing happens – the system projects only a freeze frame from the point of the video where the last user who interacted with the work left the space, and a total silence, i.e. no sound. The user(s) can also emphasize their choice of content. Thirdly, the audience is supposed to have a conversation with the piece. (I was actually hoping more of this to happen with the piece – that people would have started to dance with the piece and in that way creating new ways of communicating with the piece. To my great disappointment, no one started to dance with the piece, at least not in the first exhibition of the work.) Fourthly, Helsinki Freezing is an interactive installation with a multi-user interface, thus the user needs to collaborate with the piece and the other users. If obliged to choose one of the levels of interactivity in interactive art that best describes

**Interactivity is a style of concrete conversation with the media, It is the way you dance with the computer.**

the interaction in the Helsinki Freezing interactive installation, it is participatory, because that is the most dominant and significant mean of interaction in the piece.

On what is the interaction based? Is the view of Dixon (2007, p.147) that ‘the use of interactive and feedback-activated systems in digital performance directly relates to the cybernetic model of “communication and control”.’ It was exactly cybernetic that originally introduced the terms “input”, “output”, and “feedback”, used widely in the context of interaction systems and interactive installations as well. Further, Dixon (2007, p.147) notes that ‘even the simplest computer-activated art installations use a cybernetic system.’ This means that the interactive installation requires an input, in other words the user’s contribution, which then provides the output – in Helsinki Freezing interactive installation the projection of the video image and the sound, and the feedback – the installation system’s reaction to the input of the user(s). As follows, according to this interpretation the Helsinki Freezing interactive installation can be seen as a cybernetic system: The body affects a clear cybernetic feedback loop in the motion-activating system: the movement of the user in the three-dimensional space provides a computational input that is deciphered and reconfigured to trigger an output – a video image and a sound sample. The body of the user and the video and sound seem to be ostensibly distinct entities or “objects”, however, the cybernetic understanding sees that they are no longer separated but rather intimately connected within a communication and control system. The boundary between the user’s body and the output it triggers

collapses as media becomes, by the definition of Marshall McLuhan, “The Extensions of Man”. It can be argued to what extent the body and media are in actuality combined, but at least the feeling of cybernetic connection to the digital media the user activates is extremely strong (Dixon 2007).

## 4.2 | The immersion

To be able to create an experience as immersive as possible, I was striving in Helsinki Freezing for *immediacy*. Immediacy (or *transparent immediacy*) is a style of visual representation whose goal is to make the viewer forget the presence of the medium (canvas, photographic film, cinema, and so on) and believe that he is in the presence of the objects of representation (Bolter and Grusin, 2000). This is exactly the reason I first looked for different opportunities of doing the projection of the interactive installation onto a dome-like surface (see more in Chapter 5) – I wanted that the viewer’s whole field of vision would consist only of the imagery the b-girl sees while dancing.

Furthermore the immediacy or the immersion could have been achieved by adding haptic, kinesthetic, visceral or proprioceptive dimensions to the installation. These technologies are, however, rather complex, expensive and challenging to design and build – at least in the scale I would have needed them for my installation, so I decided to realize Helsinki Freezing using only the audiovisual dimensions.

In any event, my task was to create a kind of actual virtual reality that would take the user “inside the b-girl’s head”. As Bolter and Grusin



(2000, p.162) note that for some ‘enthusiasts, the perfect interface is one in which the user, wearing a head-mounted display, feels as if she has fallen through Alberti’s window and into a world of computer graphics. For them the immediacy of virtual reality comes from the illusion of three-dimensional immersion and from the capacity for interaction.’ As I was not planning to program a whole new game-like computer-generated digital environment where the user could adventure in any dimension, but rather to create a first-person immersive view which would let the user to “look out” from inside the frame, using the first person point-of-view video footage, it can be discussed in which extent the Helsinki Freezing interactive immersive installation can be referred as a virtual reality. Regardless, my concept is different from the case of other interactive dance video works I have seen, where the user is located beyond the frame, looking in. What my piece lacks, a feature characteristic to the virtual realities as we know them, is the opportunity of the user to change the perspective by turning her head. The perspective in Helsinki Freezing interactive immersive installation changes only when the b-girl turns her head, or in many cases, rather than her head, moves the whole or a part of her body.

Then again, Helsinki Freezing immersive interactive installation enables the viewer to control the video playback and thus to manipulate the perspective with her movement by zooming in and out. This kind of “becoming the director” and shift of control compared to, for instance, traditional film, enables the viewer to explore the space as she will – a feature that is usually attached to virtual reality. Bolter and Grusin (2000, pp.248–249) discuss that with the possibility of changing the perspective in the virtual world where the user is positioned, the virtual becomes a *simulacrum*<sup>1</sup> where there is nothing to be known apart from the senses of the interactor: ‘there is nothing behind the images because the virtual traveler defines what she knows as what she can see and therefore “interact” with, knowledge is sense perception.’

In the light of this I suggest that Helsinki Freezing immersive interactive installation would be called a simulacrum of an “actual virtual reality”. Actual, because the physical interaction with the piece is direct and actually happens, and virtual, because the environment projection it presents is “fake” (Ryan, 2001). Helsinki Freezing can also be seen as a simulation of the b-girl’s reality. After all, are not simulations usually used to present us something that is either so far away and/or elusive, like space we can see in planetariums, microscopic, like bacteria and molecules that we see in various modeling and reproductions of

1 | The word simulacrum is used in postmodern philosophy to denote a specific, distinctive product of the technologized age, a unique new form of an object or a representation that is created without a real-world referent – a copy without an original. It has since lost its meaning, applied now to encompass all kinds of images, media products, and their reproduced forms: graphic, photographic, filmic, televisual, and digital. Consequently, the term simulacrum is used to describe everything that is mediatized or not “real” (Dixon, 2007).

**You can be the mad hatter or you can be the teapot; you can move back and forth to the rhythm of a song. You can be a tiny droplet in the vain or in the river; you can be what you thought you ought to be all along. You can switch your point of view to an object or a process or another person's point of view in the other person's world.** Benedikt 1991, p.372

medicine, chemistry and physics, or dangerous but still entertaining, like rally simulations? Or something that would require a lot of practicing before actually performing the act, like flying an airplane? I consider the last example rather similar to my case. Therefore, I am in a way offering wider audience – irrespective of their physical skills or condition or previous b-boying experience – a chance to “try out” breaking in a safe gallery environment.

### **4.3 | The concept of “self”**

One more important point concerning my work is the concept of “self”. After all, my piece – by letting the viewer “inside the b-girl’s head” – offers the user the opportunity to “become someone else” for a short period of time. What interests me is whether the fact that one can

see the world through someone else’s eyes increase the immersion of the piece, or has the first person view experience used widely, for instance, in video games already become such an everyday phenomenon that it has no significance for the immersion in the Helsinki Freezing interactive installation. As Bolter and Grusin (2000) have noted people see themselves in and through media. Media, that have become technical analogs and social expressions of people’s identity, become both the subject and the object of media. Looking at a traditional photograph or a perspective painting, one can position herself in the reconstituted station point of the artist or the photographer. Watching a film or a television show, one can be that which the film or television camera is trained on and at the same time the camera itself. So, my questions is, if one will interact with the Helsinki Freezing interactive installation piece, will she then see herself as

the camera, or as the position of the camera or as the dancer – will she identify herself with the b-girl? Will she seize the opportunity created by the freedom of the virtual self and occupy the position of one or several of the b-girls, supposedly a very different person from herself?

## 4.4 | The role of the audience

The role of the audience in interactive immersive installations is beyond the concept of the passive observer. Interactive installations suggest the viewer to take part in the artistic process, to enact the piece. Reference to Rubidge (2011, p.112) reveals that ‘In the immersive interactive installation, the participating “viewers” themselves become active elements in the installation environment, responsible both for the initiation of individual image elements and the modulation or inflection of the intensities from which they are composed.’ Ideally the interactive installations are easy to grasp and offer a certain logic what comes to the system’s local responses to the user behaviours. What is more, the more entertaining and interesting the interactive installation, the more engaged and immersed the user(s) become. Interactive installations should encourage a playful, childlike fascination for the pleasure of cause and effect. An adventure through time and space that directly affects and transforms something outside of oneself should be achieved with simple gestures and understandable interfaces (Dixon, 2007).

Another feature that is characteristic for interactive installations is that the piece is never the same. Each viewer or group of viewers makes it her own rendering that can be interpreted as such only that one time when this particular user is interacting with the installation. Rubidge (2011, p.112) makes clear that ‘because the viewers are responsible for generating and/or processing imagery in real-time, each material manifestation of these installations is unique,

never-to-be-repeated event.’ This means that different viewers who enter the space in different states and times of the installation might experience the piece in a very or even completely different manner.

By summing up all of the above mentioned I conclude that interactive immersive installations are complex art pieces that suggest an artist’s idea, which can be indefinitely altered by the user(s). According to Rubidge (2011) immersive installations are not only “pictures” or images to be viewed from the outside, but rather essentially ephemeral and experiential events. In many cases it might also happen that the audience starts to interact with the piece in a totally different manner from what the designer originally had in mind:

The participants in a multi-user interactive installation are the “wild cards” in the system, for their understanding of the system is gleaned from a variety of prior experiences of both life and art, and from the deeper levels of their physiology. This influences their responses to the installation’s behaviour, and frequently disrupts the expectations of the designer(s) of the system by doing something the latter had not anticipated, and thus setting the system off into unexpected directions. This is both the joy and the frustration of creating multi-user interactive installations (Rubidge, 2011, p.118).

Consequently, the installation, the interface of the art piece is an important part of the process but without the audience the piece would never be complete – ‘The viewer completes the work of art’ (Marcel Duchamp, cited in Dixon, 2007, p.559).

kuvateksti, seuraavan sivun kuvu

..B-GIRL  
TEJA







# 5 | HELSINKI FREEZING

## 5.1 | Background

Helsinki Freezing was born already in 2007. Back then there was only a vague idea about taking pictures of breakers in the snow. Even though the media should never sublime the content, the release of the GoPro camera year 2010 put the snowball running: The concept crystallized and the piece was ready to be made. I am not completely sure which one came first – the name of the piece or the concept. Regardless of that, the core idea behind the work can be explained with the title Helsinki Freezing – frozen movements by Helsinki-based b-girls.

## 5.2 | Concept

The original concept of the work was to create an interactive installation as immersive as possible. The interaction piece could have worked as a stand-alone piece by itself, but in order to give the viewer a little more understanding about breaking and the complexity of the movement I also wanted to show the dance from a third person point of view. Secondly, as it was clear from the beginning that Helsinki Freezing would be an exhibition piece, I wanted to have more to watch for the viewer in the exhibition space than the interactive installation. That is why I included still photographs of the freezes as well as video works documenting whole sets of movements, i.e. breaking runs in the piece.

The goal with the interactive installation was to let the viewer “inside the b-girls head”. At first I thought of doing this through using a dome-like projection surface. After exploring the different

possibilities and becoming aware of the restrictions and challenges of dome projection surfaces (read more about this later in this chapter) I decided to build instead a curved large-sized projection surface that enabled rear projection.

The photographs would portray different freeze poses as well as series of breaking movements, captured frame by frame. The video works would feature a set by each one of the b-girls who participated in the production. The stars of my work are six different b-girls from Helsinki: B-girl A-Eagle, b-girl A.T., b-girl L-Monkey, b-girl Ramona, b-girl Taya and b-girl Teja. I wanted to take breaking back to streets – this time with a little twist though: in the middle of the Finnish winter.

## 5.3 | Process

The process consisted of several different phases, starting from planning. First of all I naturally needed the material, consequently I started with planning of the shooting locations and contacting the b-girls I knew and thought could suit the project. To my great joy all of the b-girls I contacted agreed to perform in my work. Hence, the production phase started with the photo shoots. I did five different shootings in five different locations with six different b-girls.

After all the material was captured – more than 1,500 photographs and hours of video footage – began the editing and post-production phase. I reproduced the photos in order to print them digitally and glue them on special plates. I edited the videos to be displayed on four different small screens in the exhibition space. On the side I was designing the interaction and survey-

ing my possibilities with the projection of the interaction.

Most of the process went according to my plan. Most changes I needed to do had to do with the interactive installation piece. These changes concerned mostly the interaction inputs and the final display and projection of the piece. The evolution of the interaction piece is described in more detail later in this chapter.

### 5.3.1 | TIMETABLE

The Helsinki Freezing preproduction happened during winter 2010–2011. Shootings were carried out in the beginning of the year 2011. All the material for the exhibition was edited and post-produced during spring 2011. The exhibition premiere with the interactive installation took place in Huuto Gallery in Helsinki in June–July 2011. Thoroughgoing documentation of the project is executed in the form of this book, beginning of the year 2012.

#### **OCTOBER–NOVEMBER 2010**

Applications of grants and exhibition times.

#### **DECEMBER 2010**

Launch of the project. Fine down of the project plan and timetable. Calculation of budget.

#### **JANUARY–FEBRUARY–MARCH 2011**

Recruitment of the dancers. Shooting of the material.

#### **APRIL 2011**

Post production. Designing the interactive installation.

#### **MAY 2011**

Post production continues. Fine tuning of the material. Preparing the exhibition.

#### **JUNE–JULY 2011**

Exhibition and installation, Huuto Gallery, Helsinki.

#### **SEPTEMBER–DECEMBER 2011**

Compiling the documentation.

#### **JANUARY–FEBRUARY 2012**

Composing the written part of the work.

#### **MARCH 2012**

Lay out of the book. Printing and binding the book.

Figure 2: Timetable of the project.



### 5.3.2 | SHOOTINGS

Before the shootings I mapped a checklist for myself in order to keep track during the shootings that all the material I would need would also be photographed. The shooting script was both for the videos as well as the photos. In practice this note was a list of different angles, crops and fields of view I needed my material to cover.

All the material for Helsinki Freezing was captured in five different shootings in five different locations in Helsinki. The locations were selected for mostly aesthetic reasons although attention was also paid to the cultural and historical significances of the places. Some locations I would have liked to use, for instance the Helsinki Cathedral (too many people around)

and the Helsinki Swimming Stadium (even too much snow), I had to leave out just because the circumstances would not have suited my purposes. After the shootings I am very content on the chosen locations.

First shootings featured b-girls A-Eagle and L-Monkey. They were photographed at the Finnish National Opera. Second shootings were done with b-girl Teja at the Sibelius Monument. Third photo shoot was with b-girl Ramona at Tervasaari. The fourth set was with b-girl A.T. at Tokoinlahti. The fifth and the last shootings were done with b-girl Taya a.k.a. T-Flow in Kalasatama cultural centre that has one of the few legal graffiti walls in Helsinki.





Previous page: Preparing the area for a b-girl battle with b-girls A-Eagle and L-Monkey.

Above: B-girl Ramona dancing with the headset-mounted camera.

Below: Adjusting the camera with b-girl Teja.

### 5.3.3 | MATERIAL

The still photographs for the exhibition were shot by visual artist Essi Ojanperä with Nikon D200 and a AF-S NIKKOR 55-300mm f/4.5-5.6 ED VR lens. The result was RAW-images that were then reproduced by me in Adobe Photoshop for printing in either 100 x 60 cm, 23 x 18 cm or 18 x 18 cm size. For the exhibition the photographs were digitally printed on paper that was glued on Silisec® plates.

The wide angle (170°) and semi-wide angle (127°) video material was shot by me in HD quality with a GoPro HD Hero camera that is a small lightweight camera developed especially for extreme sports and adventure photography. The camera has several different mounting





B-girl T-Flow sinking in the snow.

Next page: B-girl A.T. dancing at Tokoinlahti.

options. (GoPro, 2012) For Helsinki Freezing interactive installation I used the headset mount. That way I could capture the dance from the dancers point of view. Furthermore, the HD Hero can capture 60 fps video that enables high quality slow motion playback. The 60 fps mode was used in Helsinki Freezing for shooting series of movements. I also captured still images with the GoPro camera. These images were later used for the stop motion sections of the video works. The GoPro HD Hero produces 2592 x 1944 px sized still images with a 72 dpi resolution.

I also had a second video camera a Nikon D7000 and 105mm f/2.8 lens to double some of the scenes. This camera was operated by Milla Moisio or in some cases myself. I later used some of this video material as well in the video works, although I was so delighted about the feeling and the colors that the GoPro material had that I mostly wanted to edit the videos from the GoPro footage.

#### 5.3.4 | POST-PRODUCTION

After having recorded all the material – over 1,500 photographs and tens of hours of video – began the editing phase. We selected the most suitable photographs – series of movements and different freezes – for the exhibition and I post-produced, color corrected and cropped them for large-scale digital image printing. The color correction of the images that had so

big white uneven snow surfaces captured in very different lighting conditions was, to coin a phrase, rather challenging. This part of the work took five or ten times the time I had scheduled for it. At the end of the day I managed to make the snow to appear in the same color in different photos and the images were printed in Aalto University School of Art and Design Printlab.

The videos were compiled to showcase-like short film where each of the breakers had her run. I edited and post-produced the video material in Adobe Premiere (editing, compositing the stop motion sequences and creating the slow motion parts) and Adobe After Effects (color correction, animations and effects). From the material that I knew would not be used in the exhibition I compiled a teaser video and put it into Vimeo in order to market the first exhibition of the piece. At first I had planned to display the videos of each dancer on a small screen alongside the photographs of the same b-girl. Nevertheless, I was unable to get hold of six same kind of small screens to play the videos on. Hence, I edited the videos to match four small screens mounted on top and next to each other in a rectangle form. This form and technique of display allowed me to have rather creative editing solutions. I could, for example, display a different scene in each of the screens as well as make the b-girl “jump from one screen to another”. In my opinion the solution I came up







with was rather interesting and presented the videos well. Also, it facilitated the hanging of the pieces in the gallery and made the display of the works more sophisticated as the videos could be displayed as a work of their own and all the electricity wires could be placed similarly and cleanly in one place.

The interactive installation video material, HD video with a 1280 x 960 resolution using fish eye lens, shot with the b-girl wearing a GoPro headset camera (i.e. dancer's point of view footage) was edited to suit the projection canvas, a curved 10 x 3,5 meters see-through canvas that enabled background projection.

For marketing purposes I also designed a Helsinki Freezing logo as well as flyers and posters for the exhibition. The marketing materials were spread out around Helsinki in several different locations and hip-hop culture related events.

Sound for the piece was made by Lauri "Laxa" Peltonen.

## 5.4 | Compiling the interactive installation

The interactive installation was created from the GoPro video material, an Xbox Kinect sensor hidden inside a boombox, Processing, Quartz Composer composition, a huge projection canvas, a 2,5 x 1,5 m mirror, an Epson EB-X9 projector and two Genelec® loudspeakers.

### 5.4.1 | THE FIRST PLANNING PHASE

The first concept of the Helsinki Freezing interactive Installation presented the idea of letting the viewer "inside the dancer's head". At this point I had the video footage captured with the head set camera and a clear image in my mind how the installation would be like. Little did I know...

Originally I wanted the projection to be as dome-like as possible, minimum 180 x 180 degrees, preferably even almost 360 x 360 degrees. The purpose was to project the video in such a way so that where ever the viewer looked the only thing she could see would be the b-girl's point of view footage – no props, no gallery walls, no other people. In other words what I had in mind was that the projection should be an experience as immersive as possible.

My original idea would have meant that only one person at a time could have explored the piece. As I wanted the interactive installation to be also a shared experience, I decided to do the projection instead with a large-scale curved projection canvas that – even if not captivate the viewer entirely – would at any rate give a more immersive feeling than a regular flat projection surface.

### 5.4.2 | THE PROJECTION

The aim with my projection was to create a large field of view, preferably over 180°, to create an experience as immersive as possible. However, as Yuen and Thibault (2008) point out the existing projector-based immersive environments



have numerous complexity, space and cost problems and often to reach the desired result one is required to supply expensive screens, projectors and lenses. As the budget for my work was limited I needed to come up with the most affordable solution, which would nonetheless deliver an immersive experience for the user(s).

For this purpose I started out with benchmarking some previously compiled works. The most interesting example I found was an inexpensive immersive projection<sup>1</sup>. The creators had documented their work very well and their work paper (Yuen and Thibault, 2008) was a valuable source for me when I was designing the projection surface. They had used a curved mirror in order to create a half-dome projection. Their projection surface was built out of cardboard, which made it an impossible alternative for my interactive installation because I needed a see-through surface for the rear projection. I explored the possibilities of building a similar shaped projection surface from a see through material but in any case the frames of the construction were too visible and would in my opinion interfere the overall experience of the installation.

Another example was of an easy and cheap homemade curved screen<sup>2</sup>, used for driving simulation enhancement. My final projection surface in the gallery was fairly similar to this one, only in much larger scale though.

One more of the dome projections<sup>3</sup> I encountered was a rather interesting example with projected three-dimensional graphics. This one was a full dome projection. The outcome looked very impressive, only the full dome form had a couple of downsides from my project's point of view; for example, how would the viewers get inside the dome? In addition to that a dome-like projection surface would have been very challenging when it comes to the interaction input – where would I have placed the sensor in an interface like that?

### 5.4.3 | PROTOTYPE OF THE PROJECTION SURFACE

When building the prototype of the projection surface I found out that it was not possible to project the video from the front side of the projection surface because that would result in seeing the shadows of the viewers interacting with the piece on the projection surface. Consequently, I concluded that the projection has to happen behind the projection surface, that is to say I needed to make a rear projection. For this purpose I found a projection canvas that was of special plastic coated fabric-like material

1 | The "Inexpensive immersive projection" video can be watched online at: <http://youtu.be/HM-B8YVbyicE> [Accessed 2 April 2011].

2 | The "Homemade curved screen" video can be watched online at: <http://youtu.be/wEWvYjKnL18> [Accessed 2 April 2011].

3 | "SquareTangle Prototype Full Dome Projection. John McCormick and Adam Nash." video can be watched online at: [http://youtu.be/\\_hU5W3CNCJO](http://youtu.be/_hU5W3CNCJO) [Accessed 2 April 2011].



that led the light through without affecting the saturation of the colors too much.

At this point I still had an idea of using several projectors to create the very large projection I wanted to obtain. However, the next tests showed that the projectors I could get my hands to were not able to project an image big enough with the throw range available in the small gallery space. The problem was solved by mounting the projector to the ceiling of the gallery and reflecting the projection onto the canvas through a 2,5 x 1,5 meters sized mirror. The mirror was placed in an approximate 45 degrees angle behind the projection canvas. To match the dimensions of the projection canvas, overcome the distortion caused by the reflection and present the image to the viewer(s) correctly the image was then flipped vertically and keystone. To really get the projected image pixel-perfect I could have used an inverted fish-eye lens, such as a peephole lens on top of the projector lens.

Furthermore, one big challenge with the projection was the amount of light in the gallery. The exhibition time was 1 June-July in Helsinki when there is no night, i.e. it is light around the clock. The material depicting mostly snow and ice, i.e. very light pictures did not make it any easier. The gallery space was relatively light even with the curtains closed. Consequently, I assume that the Helsinki Freezing interactive installation piece would have been visually more impressive as well as immersive in a dark room. A darker setup would have undoubtedly been a stronger experience also from the kinesthetic point of view.

#### 5.4.4 | THE INTERACTION

For the interactive installation part I was taking

Ferhat Sen's Bodily Interaction course in Media Lab Helsinki. When making the preliminary plans about the interaction I wanted the interaction to be based on the following actions/inputs: Firstly, on people's position in the space – that way the projection and sounds would react to the viewers' positions in the space. Secondly, people's movement in the space, i.e. the projection and the sounds would react to (any) movement in the space. Thirdly, I had an idea of measuring people's bio features, this would have meant that the projection would react to the bio features, for instance the change of heart beat rate, of the spectators. After giving this more thought – weighting the possible measuring methods of this input plus exploring the possibilities of different output and feedback loops of and paying attention to the fact that public spaces and audiences are complex environments for video interaction and that a meaningful interaction is only possible by constraining the interaction to fewer and simpler entities (Nguyen et al., 2006), I came to the conclusion that this option would a) be too complicated to measure with many people in the space at the same time, b) be too complicated of an interaction to the user to understand, i.e. grasp what is affecting what. On top of that I doubted if there would be enough variation in people's bio features in a quiet exhibition space in order to have any prominent output. Consequently, I let this idea go.

The interaction of the Helsinki Freezing installation is realized with the help of an Xbox 360 Kinect sensor. The sensor is capable of registering movement in a 3D space. The Kinect sensor was attached to a computer running a

Processing program measuring what is happening in the space. The Processing program was programmed by media artist Matti Niinimäki who kindly gave his program for me to use in the Helsinki Freezing installation. From Processing the data was sent to Quartz Composer that then controlled the video projection and the sounds of the installation.

#### **5.4.5 | REALIZATION OF THE INTERACTIVE INSTALLATION**

For the simulation and rendering of the Helsinki Freezing interactive installation I decided to use Quartz Composer. Quartz Composer is a node-based visual programming language developed for Mac OS used for processing and rendering graphical data. The compositions are created from visual patches that are compiled together in a graphical interface without having to actually write the code.

As I am no programmer Quartz Composer was the best option for me. The possibility to use graphical language to program in Quartz Composer helped me to grasp the cause and effect relations of the patches and facilitated the programming process. Furthermore, Quartz Composer allows generate impressive HD quality video rendering quickly which was important in my work as the piece should interact with people in real time without a delay.

The programming process was good in the sense that it cleared out the concept of the interaction piece. It was decided that the viewers were going to be able to interact with the piece in the following manners: Firstly, the closer the screen and the sensor that is positioned in front of the screen the viewer gets the more the video zooms in and vice versa. And secondly, the closer the screen the viewer gets the louder the sound volume gets and vice versa. At some point of the programming I also had an input of moving in space on the x-axis (from left to right or vice versa). The idea was that this movement

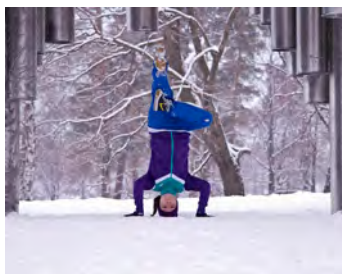
would have controlled the video play head i.e. the user would have been able to rewind, pause (by staying still in the middle of the active area) and forward the video. However, when testing this interaction it appeared very hard for the test persons to understand what was happening plus they did not seem to have the patience to interact with the piece long enough in order to see more than just a thirty-second snippet of the video, which was, moreover, the same snippet that they were just rewinding, pausing, and playing all over again. Therefore the interaction with the piece ended up being rather simple, but at least that way the user can clearly see and hear the instant feedback of her actions.

The balance and features of the sonic and visual output of the Helsinki Freezing interactive installation change according to the data the system gets from the Kinect sensor. It takes into count up to six people's position data in the space at the same time. If there is more than one person in the space, the program counts the average positions of the people in the space (average position data is counted by the program in real-time). If there is no one in the space, or in the active area of the installation (marked with a 2,5, x 2,5, meter checkered dance mat), or if the sensor does not track any movement, the projection showing is a freeze frame from that spot of the video when the last person stopped interacting with the piece or left the active area of the interaction.

## **5.5 | The outcome**

### **5.5.1. | THE EXHIBITION**

The first exhibition of the Helsinki Freezing piece took place in Huuto gallery in Helsinki during June–July 2011. The photographs from the exhibition are presented on the following pages. Video material can be found on the DVD Appendix of this book.



B-girl Teja | Baby Freeze, Emäntä Freeze, Head Stand Feeze 1 & 2.  
 From the Helsinki Freezing exhibition series.  
 Photographs by Essi Ojanperä.







B-girl A.T. | Air Baby Freeze, Worm 1–5.  
From the Helsinki Freezing exhibition series.  
Photographs by Essi Ojanperä.





B-girl T-Flow | Freeze 1–4.  
From the Helsinki Freezing exhibition series.  
Photographs by Essi Ojanperä.

B-girl Ramona | Head Jump, Front Sweep 1–4.  
From the Helsinki Freezing exhibition series.  
Photographs by Essi Ojanperä.



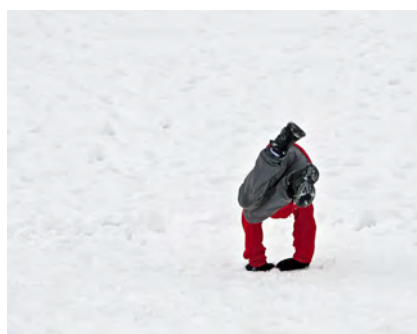








B-girl A-Eagle | Foot Work, Baby Freeze, Blank Freeze, Chair Freeze.  
From the Helsinki Freezing exhibition series.  
Photographs by Essi Ojanperä.



## 5.6 | Documentation

The whole process was documented in the project website, [www.helsinkifreezing.fi](http://www.helsinkifreezing.fi) and now in the form of this book. From the very beginning of the project I learned a habit of updating the site every time I was working on the piece. That way I have all the planning, production and other phases of the project in chronological order in the site. I must admit, that the site was a huge help for me when compiling this book. Also, the website was and is a very useful marketing tool for the project.

of the installation and took their time in interacting with it, delivered that the interactive installation was “cool”, “interesting” and “innovative”.

Helsinki Freezing will be exhibited in the group exhibition Masters of Aalto of Aalto University Spring 2012. There are also plans to take the piece abroad, to international breaking jams and/or other hip-hop culture related events.

## 5.7 | Reflections and future

In general the feedback from the audience for Helsinki Freezing was highly positive. People liked the subject as well as the realization of the piece. Many exhibition visitors applauded the overall concept and were also fond of the concentration in details. There were hundreds of visitors in the gallery during the exhibition including “regular” people as well as representatives of hip-hop culture.

The interactive installation piece seemed to be quite hard to understand for the users even though the interaction was really simple. Maybe the interaction was too simple? When interacting with the piece most of the people were trying out, for instance, hand gestures and jumping in order to get the installation react to their actions. Some people overacted the interaction while some seemed to have serious problems around the installation and were too shy to even enter the active area of the installation. That might, of course, also be a cultural thing, which I will only know for sure after offshore exhibitions of the piece. Those viewers, who understood the logic

B-girl L-Monkey | Head Stand Freeze, Swipe 1–4.

From the Helsinki Freezing exhibition series.

Photographs by Essi Ojanperä.

# 6 | CONCLUSIONS

Accomplishing the Helsinki Freezing piece – developing an artistic concept, designing an immersive interactive installation and building an exhibition has been a more than valuable experience for me. I have understood the challenges and restrictions of building a complex multimedia artwork combining dance and new media. During the process I learned that in order to reach one's goals one must also to be prepared to make compromises and love change – one can not get too attached to her original ideas and one must be prepared to adapt to the current circumstances. The end result may not always be what one originally had in mind, especially since a work of art, which includes interaction encompasses so many variables from the reaction and current state of mind of the audience to the current physical, such as lighting and spatial, conditions.

Through the development process of the interactive installation I have explored possibilities of creating new ways of presenting breaking in a complex gallery environment. I have created a simulation of breaking – an accessible actual virtual reality – to be experienced by people with all sorts of backgrounds – whether practitioners of dance or not, young or old, physically able to perform b-boying or not.

Moreover, I have been spreading the gospel of b-boying and hip-hop culture over the boundaries of cultural prejudices and facilitated breaking in an environment that is usually used to present artworks of high culture only. I see that in this aspect of my work I succeeded over the expectations – I was able to bring into the gallery a slice of a little-known underground culture

and this way spread the knowledge about hip-hop culture and b-boying. The different happenings I arranged in the gallery environment with DJs, b-girls and b-boys turned the quiet space into a vivid urban culture scene and a multidisciplinary meeting point for different age and social groups.

How my work will be received in the rather dogmatic hip-hop community remains still to be seen. I aimed in “keeping it real”, utilizing the available sources to keep my facts correct and doing my work “by the book.” The feedback so far has been positive, but taking breaking out of its bodily context and turning it to ones and zeros might be a red rag for some hip-hop enthusiasts. Notwithstanding, I see that Helsinki Freezing serves a wider purpose in the hip-hop culture – first of all, it is a mean of spreading the knowledge about the culture and making it known by a wider audience. Secondly, I feel that as a dancer I am obliged to do *my* part of the passing along of the knowledge about the history of the dance through *my* experiences and my participation – in this case by sharing the experience of breaking through interactive art as one of my distribution channels. The distribution channels are essential to the archiving and circulation of history without which histories are lost (Fogarty, 2006).

When it comes to the media I used, it can be discussed whether I achieved my goal with “letting the viewer inside the b-girl head”. The evidence given by Rubidge (2011) that is based on the neuroscientific study by Gallese et al., where the scholars found out that the same patterned neuronal activity is activated in the



neurons whether the action – the dance – is being viewed or enacted by the subject would support my vision of immersing the viewer in breaking through an audiovisual representation of the act. The principle that understanding a dance performance emerges from something deeper than a person's cognitive understanding implies that my installation is giving the user(s) an experience fully reminiscent of actually enacting the break run. Furthermore, the concept of imaginary training used widely in sports to achieve the "perfect performance", for instance when preparing for a competition, would denote that even though the act itself is highly corporeal and requires a certain level of physical and motoric skills, the cognitive processes behind the activity play a very important part of the execution of the act as well. On this basis it may be inferred that the Helsinki Freezing interactive installation activates the viewers cognitive processes by positioning the user in the b-girl's situation and thus enhances the experience.

Based on my background studies of the use of dance in the context of new media, it must be recognized that my way of representing breaking is ground-breaking. Although the use of dance with new media is a rather popular concept in live performances, the area of interactive b-boying and new media art taking place in a gallery environment is a new subject in the field. Similar works have not been done before. Hopefully my work will open new perspectives in the domain of exploring new ways of representing b-boying by utilizing new media. The future of dance even might be in disembodiment:

**Perhaps the most vivid change is coming in the art that is closest to the human body: dance. If dance is the art that is most embodied, dependent intimately on the state of the body... and each art form is heading for its opposite, then the future of dance must be found in disembodiment.**

Marcos Novak cited in Dixon, 2007, p.211



„B-GIRL  
T-FLOW“

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# APPENDIX 1

## A Small Breaking Dictionary

**b-boy/b-girl** | A breaker. Some say that the origin of the term comes from the words “break-boy” or “break-girl” — the dancer is timing her dancing to the breaks (see below) of the songs. Other opinion is that the term comes from the words “Bronx-boy” or “Bronx-girl”, because the first breakers were from Bronx, New York.

**baby freeze** | One of the basic moves in breaking. The name of the move comes from the dancer’s position that resembles a lot the fetal position.

**battle** | Battles are defined as the competition between two or more dancers or between crews. In battles each b-boy/b-girl takes a turn trying to one-up their opponent. Each dancer/crew dances a run (see below) one after another. There will be as many runs as decided in beforehand or as many as the dancers have time to do during a designated time frame or as many as the dancers are able to do. The winner of the battle is decided by the audience and other dancers or in official competitions by judge(s).

**break** | A break in the song’s melody that is usually an instrumental or percussion sequence. Breakers dance especially to breaks but also to break beats — drum and percussion loops — that are sampled out of breaks.

**chair freeze** | One of the basic moves in breaking. A freeze where the dancer’s legs are in a position that bears a likeness to a chair. Sometimes this freeze is even called 4 Freeze because the position of the legs can also be seen reminding of the number four.

**crew** | A group of breakers formed by several

b-girls and/or b-boys.

**cypher or cipher** | Breakers have fun and compete in the cyphers. Dancers form a full circle where there’s one person at a time dancing and showing the skills in the middle of the circle. The circle is the space that dancers create with their bodies as they surround the performing dancer. The cipher can turn into a battle any time.

**footwork** | An essential part of breaking in which the dancing happens on the floor level. The upper body is endorsed with the hands while feet are doing the steps.

**freeze** | An essential move in breaking — it’s any kind of stylized halted motion “freezing”, “turning into ice”, that is used to emphasize for example the end of a run (see below).

**head stand** | One of the many different freezes in breaking that has a lot of variation in it. The only rule is that it’s always performed while doing a headstand. Base for many moves, such as the head spin.

**powermoves** | The acrobatic part of breaking that requires a lot of strength and coordination.

**run** | An entity of breaking that usually starts with toprocks (see below), continues with footwork and powermoves and ends to a freeze.

**toprock** | A dance style, a part of breaking that happens in an upright position. Usually a run starts with toprocks.

